

# On a new criterion for the determinate-indeterminate dichotomy of the moment problem

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## **Abstract**

If the classical moment problem admits solutions, it has either exactly one solution or more than one solution. Correspondingly, the moment problem is either determinate or indeterminate. In terms of Jacobi operators, this dichotomy translates into the operator being either selfadjoint or symmetric nonselfadjoint. In turn this means that the sequence of polynomials of the first kind at nonreal points outside is either outside  $l_2$  or inside this space, respectively. In this talk, I will present a completely new criterion based on bases of representation (in Akhiezer-Glazman terminology) for Jacobi operators and the structure of the corresponding matrices.